

URBAN RESILIENCE. AN APPROACH TO URBAN DYNAMICS. THE “URBAN GAPS” OF MATARO.

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ABSTRACT

This working paper explores the new and emerging issues related to the application of the theory of Urban Resilience and the concept of Panarchy (Gunderson & Holling) to the understanding of urban dynamics. To do so, it will base on the analysis of the “Urban Empties” studying the interaction and the feedback relationship between urban planning and social initiatives in the case study of Mataro as a continuum interaction of dynamic cycles at different scales.

The very first part of the paper aims to show the evolution of the different meanings of the concept Resilience, from its original conception from the engineering industry, characterized by the capacity of any system to go back to an starting point; the socioeconomic resilience, highlighted by the amount of resistance facing stochastic events; until the socioecological one, where the emphasis lays on the adaptive capacity of the system and the interaction between adaptive cycles at different time and space scales, known as Panarchy.

The second part includes the main field work body of the project consisting on the characterization of each dynamic cycle interacting at each space and time scale. Thus, the smallest and fastest one (parcel) is associated to social motion initiatives; the medium (neighbourhood) , is identified with successive urban planning reviews; and finally, the biggest and slowest (city scale) is linked to “Urban Empties”.

This part includes the localization and characterization of the Urban Empties of Mataro, the review of all the urban planning since the approval of the Local Master Plan in 1977 and the identification of several social actions that have taken place from then till nowadays.

Finally, as the innovative part of this work, Panarchy schemes are drawn showing the different mechanisms and processes through which the different stakeholders and actors interact and the urban dynamics happen, providing a better understanding of the evolution of the whole system.

Key Words: Dynamic cycles, scalar interaction, system feedback, adaptive capacity, panarchy

BACKGROUND

Resilience. General theoretical framework.

This new way of approaching the urban reality, based on evolution is not spontaneous generation but has its origin in a big conceptual change of the 50s of last century since the 50s of the last century and subsequently s has been reproduced in many academic disciplines in relation to the understanding of the processes.

So Cybernetics (Ashby, Weiner 1945-55), the study of the mechanisms of control and feedback loops, the development of general systems theory (L. Von Bertalanffy, 1945), and its development level Process Dynamics Industrial Systems (J. Forrester, 1960) were the germ of a form of understanding of living systems (biological and social) of different inert (physical).

These followed the rise of Chaos Theory (E Lorenz, M. Ed Feigenbaum al. 1980) to the development of the Theory of Complex Adaptive Systems (CAS) as the basis of Complexity Science (Gell-Mann, JH Holland ed al. 1990) developed the Santa Fe Institute in California.

A new epistemology based on the study of the systems from the point of view of the constant evolution sudden breaking of symmetry and balance, the irreversibility of processes, feedback loops, self-organization, emergent properties, non-linear inputs-outputs, interaction at different spatial and temporal scales and many other properties contrary to classical Newtonian determinism.

There are two ways to deal with the complexity of the reality of CAS. On the one hand, as a feature incomprehensible result of the multiplicity of interactions. Thus, according to Emory Roe (1998) should embrace the complexity and uncertainty resulting try and analyze it through the selection and analysis of some seemingly relevant interactions.

On the other hand, the alternative view defended by Gunderson and Holling (2001), whereby the complexity emerges from a small number of control processes. These processes or systems are characterized by self-organization, diversity and individuality of the components, the interaction between localized components and autonomous processes selectively able to select some of the results of these processes to the feedback of the system (Levin 1999). A template, a basic structure, a small group of self-organizing of the dependent variables, secondarily, the other processes of social development. (Holling, 2001).

Resilience and origin of the term different meanings

The term was introduced by CSHolling Resilience (1973) to describe patterns of change in the structures of ecological systems.

Much of the work has focused on the study of resilience as the ability to absorb "shocks" keeping functions. However there is another aspect of resilience, which is what concerns us in this work, which has to do with the capacity for renewal, reorganization and development, which has been less studied but is essential to discourse sustainability (Gunderson and Holling, 2002; Berk et al., 2003).

In a resilient socio-ecological system, disruptions have the potential to create opportunities for new things, to innovate and evolve.

As stated Folke (2006), the traditional approaches have implicitly assumed a stable environment and infinitely resilient, from a static view in which the flow of resources can be controlled by the "self-repair" of nature and return to the original state of equilibrium once recalled the impact on the environment.

However, this view of the central balance, however, very few women tracks erratic behavior of systems that are not close to balance (Holling, 1973).

The prospect resilient involves a leap of policies to monitor changes in systems supposedly stable to enable the management of capacity (resilience) systems socio-ecological cope with, adapt to and shape change (Berk et al ., 2003, Smit and Wandel, 2006).

In this regard, Walker (2004) and Adger (2005) argue that management resilience improves the likelihood of desirable ways of sustainable development in changing environments where the future is unpredictable and surprises are likely.

As mentioned above, the outlook appears resilient ecology of the 1960s and early 1970s studies of the interaction between populations (predator / prey) and their response in relation to the theory of biological stability (Holling, 1972)

As Holling (1973) and • illustrate, natural systems show the existence of multiple domains or multiple stability basins of attraction and how this is related to ecological processes, random events and heterogeneity of stairs time and space.

At first defined resilience as the ability to stay within a certain domain of attraction before the change (perturbations / fluctuations) stating that resilience determines the persistence of relationships within the system and is a measure of the ability of these systems to absorb changes in the variables and parameters of the system and persist. (Holling, 1973, p.17).

This meant new perspective, then, a new source of inspiration for the study of many other disciplines, from anthropology ecological economics, among others. And in our case, for the study and understanding of urban dynamics.

The process of adaptive management (adaptive management process) was one of the results of this new way of understanding the socio-ecological systems and the basis for theoretical characterization of the behavior of ecosystems and their management and had its shape volume "Sustainable Development of the Boisphère" (Holling, 1986).

This document speaks for first time of the "Adaptive Cycle" where nonlinearities are essential, States multistables are inevitable and surprise is the consequence as a result of the interaction of processes at different temporal and spatial scales in at least three different orders of magnitude (Holling, 1986)

"The science of surprise" was the inspiration for many other groups, including those related to the development of complex systems theory (Complex Systems Theory) and the foundation for the promotion of the first acts of an institutional nature (Workshop on future surprising).

For Carpenter and Gunderson (2001) is the most imploring "learning to manage change" rather than simply react to it, as well as the key role that individuals and small groups play. This means that uncertainty and change are part of the game and we must be prepared and must learn to live.

This new perspective and its relationship to resilience is in stark contrast to the strategies of control variables resource management (or the planning of a city) around the idea of the central state balance that has dominated contemporary political management of natural resources and ecosystems (Folke, 2006).

These policies have often managed to solve short-term problems but produced effects on other variables that act or spatial scales has resulted in vulnerable systems because of the simplification thereof.

So, as a summary, we can distinguish two substantially different concepts of resilience. On the one hand, and strongly influenced by the traditional view of central equilibrium linear systems, we can mention the Engineering Resilience as the return time after disturbance (Holling, 1996), focused on maintaining the efficiency of the function The consistency of the system and a predictable world around a single equilibrium state. These RESISITIR disruption and change to preserve what you have. (Folke, 2006)

Secondly, regarding the dynamics of Complex Adaptive Systems (CAS), the Biological Resilience focused on heterogeneity and diversity response system that makes it impossible to predict the trajectory described in his "way back ". These researchers speak of "schemes" and "attractors" instead of terms such as "stable state" or "balance." (Carpenter, 2003).

Resilience concepts	Characteristics	Focus on	Context
Engineering resilience	Return time, efficiency	Recovery, constancy	Vicinity of a stable equilibrium
Ecological/ecosystem resilience social resilience	Buffer capacity, withstand shock, maintain function	Persistence, robustness	Multiple equilibria, stability landscapes
Social–ecological resilience	Interplay disturbance and reorganization, sustaining and developing	Adaptive capacity transformability, learning, innovation	Integrated system feedback, cross-scale dynamic interactions

Image 1. Resilience Concept evolution

Folke, C. (2006)

The development of the theory of CAS should allow explain how complex structures and interaction patterns can emerge from the chaos with simple but powerful rules that guide change (Folke, 2006).

Levin's work (1998) it lists the factors characteristic of CAS sustained diversity and individuality of system components, localized interaction between these components and process autonomous able to make a selection and repetition of some of these components Based on the results of local interactions. This should ensure a continuous process of adaptation and the appearance of an organization in between / among different scales and ensuring new generation of perpetual dynamics far from equilibrium.

Several authors have characterized the behavior of CAS in economics, Arthur (1997) highlight six: interaction dispersed absence of a controller global, cross-organization at different scales, and dynamic adaptation remains far from equilibrium. Meanwhile, Holland (1995) was characterized by the aggregation, nonlinearity, diversity and flow.

40 years after the publication of Holling (1973) on multiple basins of attraction in ecology, is now substantial empirical evidence on a variety of systems and terrestrial and freshwater ecosystems. The jump that occurs from a steady state to another can be sudden and dramatic or may be gradual.

Adaptive Cycle, Panarquía and Resilience.

Gunderson and Holling PANARQUIA developed the concept to explain the evolutionary nature of the CAS. A hierarchical structure in which natural systems (unlike physical) are interconnected in an adaptive endless cycle of growth, accumulation and REESTRUTURACIÓN RENEWAL. These cycle, moreover, cover all spatial and temporal scales, from the smallest leaf to the biosphere from the days until geological epochs.

The concept of hierarchy Panarquía combines spatial / temporal concept of the adaptive cycle. (Holling, 2001)

HIERARCHY

This concept of hierarchy system was adopted initially by Simon (1974) to not so much from a vision of control, but to distinguish different levels generated from the interaction of variables like speed and power transfer talk information and material from the lower levels to the higher.

These levels have two basic functions complementary. On the one hand, preserve and stabilize the conditions of lower levels, smaller and faster. On the other hand, generate and test innovations for levels higher and larger lenses.

This proposal was first approach and inspiration for environmentalists (Allen and Starr, 1982 O'Neill et al., 1982 and Levin, 1999) to make the leap from small-scale to multi-scale and global vision.

ADAPTIVE CYCLE

According to Holling (2001), the adaptive cycle and the future state of the systems are determined by three features of the system that governed their response to changes.

- **Potential.** The potential inherent in the system that is available to change as this determines the extent of the potential range of possible options for the future. They are known as the wealth of the system.
- **Connectivity.** The internal controllability of the system; ie the degree of interconnection internal actors and components. A measure that reflects the flexibility or rigidity of these controls by evaluating the sensitivity or not to perturbation.
- **RESILIENCE.** Adaptive capacity; the resilience of the system as opposed to vulnerability, as is their vulnerability to unexpected and unpredictable events.

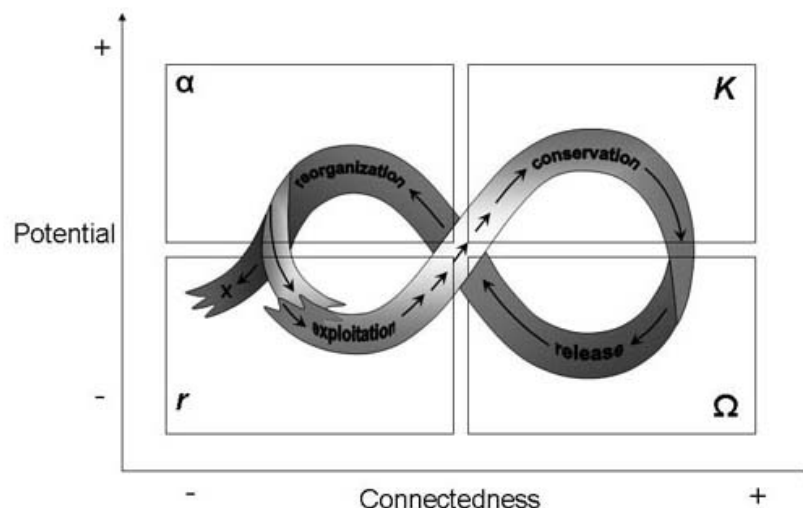


Image 2. Adaptive cycle

Gunderson i Holling (2002)

Both are potential connectivity to the representation of the adaptive cycle. The course alternates long periods of slow accumulation and transformation of resources (r K phase and phase), called frontloop with other shorter and faster (Ω α phase and phase), known as backloop, which create opportunities for innovation.

During slow traffic explosion and rapid growth phase (r pahse) towards the conservation phase (phase K) is an increase connectivity and stability and capital is accumulated. This also implies a gradual increase in the potential for other types of ecosystems and possible futures.

As the system progresses connectivity resulting in a hiperconnectivitat and the possibilities are very limited for control operation (use?) System at that stage (Hollin, 2001).

K ra transition phase is increasingly predictable as it develops while the phase Ω to α is inherently unpredictable and highly uncertain. It is, therefore two distinct but related objectives in a maximized production and accumulation and other priority

invention and reassortment. Two objectives can not be achieved simultaneously but successively achieved. The adaptive cycle encompasses two opposing processes: growth and stability on the one hand, change and variety, on the other. (Holling, 2001).

RESILIENCE The concept of joining the scheme adaptive cycle as a third dimension as shown in the following figure.

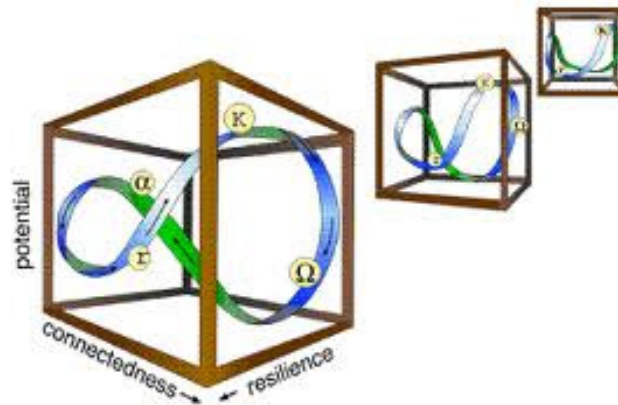


Image 3. Adaptive Cycle and Resilience

Gunderson i Holling (2002)

This new view can be seen that the traditional representation in the form of eight adaptive cycle is a 2D projection of the trajectories traced adaptive systems.

It can also be noted that the Resilience increases or decreases in size as the system progresses. Thus, resilience is high during backloop, connectivity and low controllability. During this phase it is possible restructuring items before creative destruction, were linked strongly to form other structures. This phase also allows testing of these new structures due to the low cost of existing bug. Thus, resilience is the concept that allows reconcile the paradox between conservative and creative nature (Holling, 2001).

In summary, there are four fundamental characteristics of the adaptive cycle between growth and accumulation and novelty and renewal:

PANARCHY

The concept of PANARCHY aims to be the representation of the hierarchy clutch a set of adaptive cycle whereby sustainability is the result of the operation of these cycles and communication between them (Hooling, 2001).

A place to capture nature adaptive and evolutionary cycles including adaptive interlinked across temporal and spatial scales.

A new static vision systems which levels are sensitive to small perturbations of the lower levels, smaller and faster, especially during transition phases, $K > \Omega$ and $\alpha > r$.

We must differentiate the different processes that occur inside the panarquias. On the one hand, internal processes and adaptive cycle, on the other, the interactions between different levels cycle between different temporal and spatial scale.

Regarding the former, and as mentioned above, the continuous transition between destruction and permanent renewal is the possibility that the progression of the system from generating and testing new products from potential released after periods of growth and accumulation.

Regarding interactions the cycle different temporal and spatial scale, will deepen the two basic forms of interactions including: REVOLT and REMEMBER.

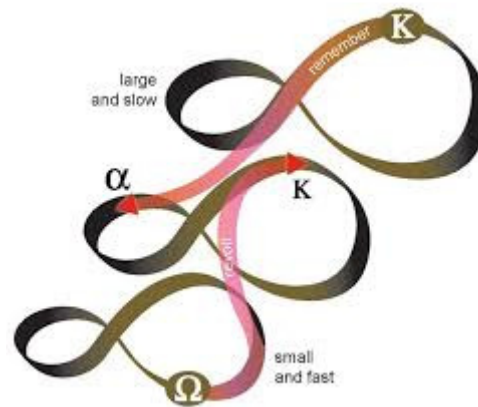


Image 4. Panarchy

Gunderson i Holling (2002)

When a level Panarquia between the phase of creative destruction collector Ω • span can spread to higher levels especially if they are under K when resilience and vulnerability maximum is lower. This process, from the lower to the upper levels faster, bigger and slower, is what is known as REVOLT.

In the opposite direction, ie, from the upper levels, extensive and slow down, the smaller but fast cycles produces other interaction mechanism at different scales, the REMEMBER. In this, the resilience of a case after a lapse col • K is strongly influenced by the level (maintenance before the release) immediately above the dynamic cycle as this acts as the repository of the capital needed for the renovation of the former. It is the "memory" that will restore to recover.

The Panarquia is the representation of how a system can take advantage of benefits provided by the invention and experimentation generating opportunities while remaining safe from those processes that by their nature or exuberance, could reach the destabilizing (Holling, 2001).

Urban Resilience: the concept of resilience applied to urban planning and the built environment.

According to Schön (1983), the Resilience as a design criterion was an implicit part of the traditional constructive knowledge before S XIX. The exaggerated repetition and repairs were constructive forms of tacit knowledge.

The urban fabric is a socio-technical complex that encompasses different scales - buildings, neighborhoods, cities, regions - each with different time constants, actors and institutional regimes (Hassler, 2014).

The concept of resilience offers a means to address the evolution of the built environment in the long term and to explore the implications of the changing conditions on the effectiveness of different approaches to the planning, design, management, evaluation and governance.

For Steward Pickett, Brian McGrath, Mary and Alexander Felson Cadenasso the Resilience is a key concept for the operationalization of sustainability at the city level. While sustainability is a set of goals, resilience is the foundation metaphorical should promote the achievement of these goals.

(Pickett et al.) Focused on the use of Adaptive Cycle model and characterize the urban environment from the identification of the mosaic (patches) as a reflection of social and ecological processes with which to define "Metacity" model as open and porous urban dynamics, suitable for urban transformations include multiple scales.

METHODOLOGY

Before setting the methodology, consider desirable and necessary to present here the thesis proposal will then walk to the research and analysis of results.

• THESIS PROPOSAL

According to the reasoning of Brunn and Malecki (2004) Mataro, with a high loss of jobs, investment and social cohesion, is in a post-industrial situation. In this situation, the "urban voids" are a symptom.

In this context, the local administration seems to redirect some of the tools that has (Local Agenda 21, socio-economic agreements, Urban planning ...) to policies that help "overcome" a clear example of will adaptation, evolution and innovation.

Furthermore, we must consider whether this is a desire to return to its initial position (Social Resilience), or it really is intended to find a new equilibrium stage / performance established bases and adaptability dynamism (socio-ecological resilience) to the city.

It seems, however, that the initiatives proposed maintain a principle of hierarchy "top-down" incapable generally incorporate new agents to make decisions.

However, the complexity of the urban system, which makes it impossible to run from approaches "Seeing-like-a-state pathology" is generating new dynamics that other dimensions and at different spatial and temporal scales involve regeneration and urban growth.

As this article is based on a an catalan first studi, a terminological translation must be done:

Where:

- Escal Ciutat = City scale / Buits Urbans = Urbans Gaps
- Escala Barri = Neighborhood scale / Planejament = Urban Planning
- Escala Solar = Plot scale / Moviment ciutadà = Social Motion

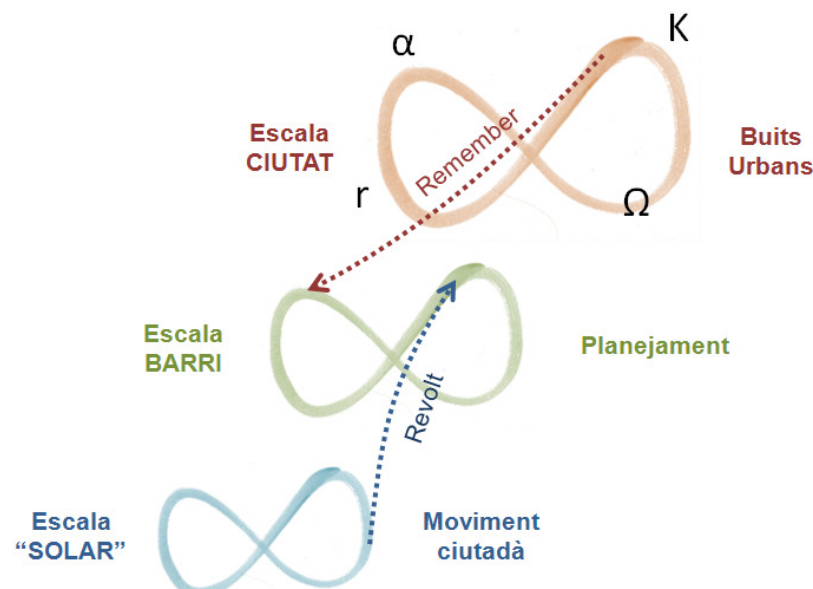


Image 5. Proposal for urban Panarchy

URBAN GAPS

As already explained above, the *leit motive* of this work is an approach to understanding urban dynamics of Mataro from the study of Urban Gaps in the city.

Thus, the seed of this concern is the existence, permanence and proliferation of these urban gaps in the urban fabric consolidated.

For the realization of this work have been classified into three types Urban Gaps:

- LOTS: Sites from undeveloped or no debris before.

- BUILTIDING: Buildings completely empty, regardless of whether or primary use is creating new buildings or existing buildings that have been emptied. It also includes public buildings (schools, museums ...) with a level of use below capacity.

- COMERCIALS: Local with direct access from the street, regardless of whether they are newly created or existing.

Below is the result of data collected during fieldwork in a plane for each plane type and a set of them.

It spelling the perimeter of the old and the inner ring roads for better identification and understanding of the overall situation.

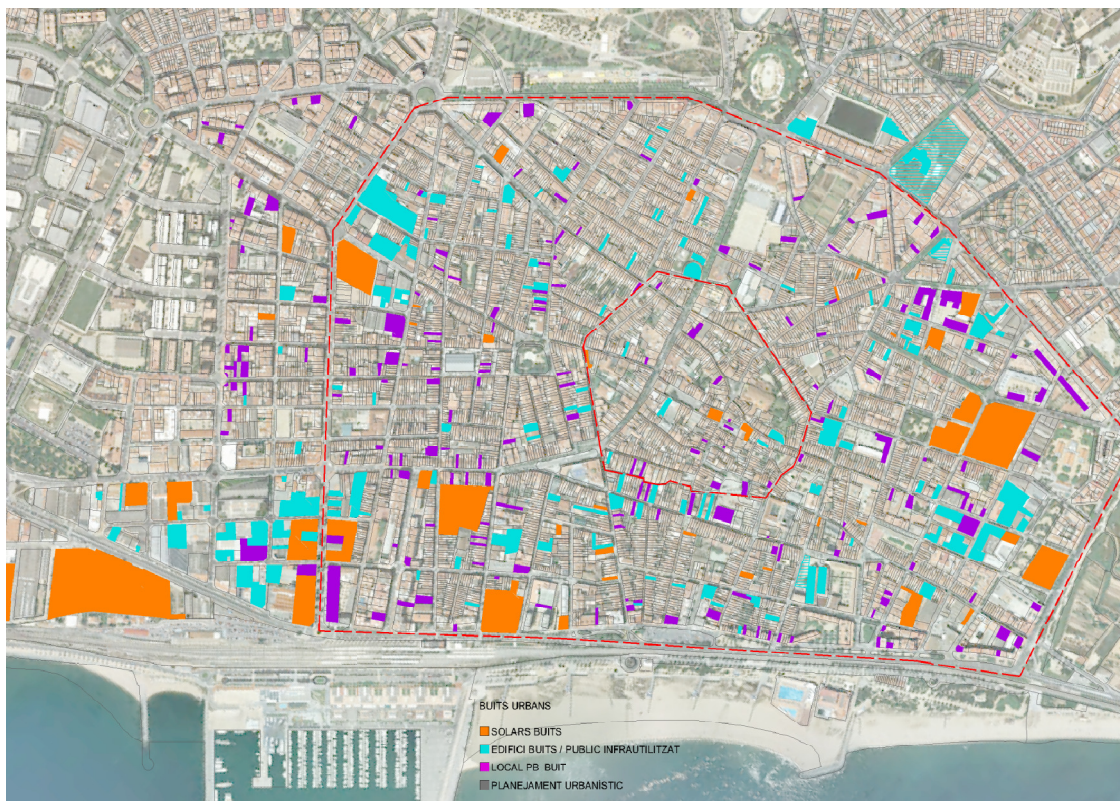


Image 6. Urban Gaps Plan

	Area	# ID	% of area	% of # ID
LOTS	107.910,55	42	46,92%	11,35%
BUILTLDINGS	68.142,43	126	29,63%	34,05%
COMERCIALS	53.939,58	202	23,45%	54,59%
TOTAL	229.992,56	370	100,00%	100,00%

Table 1: Urban Gaps characterization

From these results we can get the relationship between the number of elements (hollow) for each of the typologies and the surface is not affected by this proportion. Thus, 42 plots, with only 11.35% of the total mean the 46.92% of the total area of urban gaps identified. Inversely, the premises, with a total of almost 55% of elements affecting only 23.45% of the total.

In the same vein, as expected, the average surface of each type is different, being the greater of Sites (2.569,30m²), intermediate buildings (540,81m²) and lower for local (267,02m²).

On the other hand, inversely, uniformity regarding the surface is the largest Local, being Sites which have a greater diversity of size.

Regarding their spatial distribution on the whole observed effects "explosion" from the old centre, with a gradual increase in number and size as we approach the perimeter of the study area.

Thus, the core of this distribution is dominated concentric empty premises, with a gradual onset of empty buildings and empty lots sporadic locations. In the periphery, however, especially in the east and west fringes could also find three types interchangeably, although there stands the surface of empty lots, compared to the centre.

However, as a line of research and deepening, we should insist on these issues from the point of view of complexity (Ag. Distributions potential types Gaps Urban)

This pattern is partly in the dual process of the growth of the city itself, on the one hand, followed a homogeneous occupation of the territory until the mid twentieth century, and the other, and with the arrival of immigration was characterized by the appearance of isolated suburbs.

URBAN PLANNING

According to the initial plan (see Figure 1) the chosen tool when to approach and understand the reality of urban dynamics Urban Empty Quarter Scale / Island is the Municipal Urban Planning.

The Urban Planning is from the orthodox approach of urban planning, the basic instrument for the implementation of the "model or idea of the city."

Moreover, in the absence of a general review of municipal planning, urban planning has been characterized by specific proposals (sectors) with a scope (size) comparable to the island or district.

Intuition is starting one hand, there is a cause / effect / accused from each other in a feedback process that blurs origin and consequence, and on the other, in such cases, the planning planning is simply the formalization, on paper, a solution of an idealized urban concrete without implying the effective implementation of it.

Regarding the structure of this section, and the subsequent comparison with the data above, this section will consist of two parts.

On the one hand, to evaluate the evolution of these figures during 1997 (PGO Review Mataro) today to try to analyze the turnaround from the point of view of the planned surface and the nature of the figures planning developed.

On the other, identify and locate geographically all those planning figures (Planning General Planning and Urban Management Derivative) currently in force in order to compare it later with the reality of urban voids.

General Plan 1996

Since the revision of the PGO Mataro 1996 identified areas which were in a state of change and spoke of the need to "... define Performance Management Units (AU) with a sense of improvement and rehabilitation of existing buildings ... "in the historic city," ... the new delimitation of Special Plans change of use ... to the creation of new funds and open spaces ... "on the Eixample quarter, and finally, "... delimitation of areas of joint arrangement ... not adapt to the uses of the immediate environment ..." in other surrounding neighbourhoods.

This highlights that since 1996 they detected the weaknesses of certain sectors of the city and so it is recorded in the General Planning developing performance management units 54, 15 and Remodelling Sectors Reindustrialisation 14 Special Improvement Plans Urban and Interior Reform, which is listed below.

Since then, the city has experienced several stages and cycles at urban level, first marked by the crisis post-Olympic to the late 90s and then a sharp rise in the initiative planning, public and private, fuelled by a new wave of immigration.

So, without a new General Plan review and approval of the POUM, the municipal planning is based, firstly, to develop derived planning (and Plans Partial Special Plans Urban Improvement and Reform Interior) that the PGO identified and, secondly, to promote specific modifications of the General Plan in those sectors where it highlights the inefficiency of the prescriptions or expiry of the first.

However, the large volume of the city's urban initiative has been promoted through specific modifications of the General Plan, a total of 56 finally approved and adopted two initially and currently undergoing public exhibition .

With this, the total area of land affected by these changes is 1.479.145m² (147,9Ha), which means more than 20% of the urban land 746Ha (General Directorate of Planning, 2005).

Finally, you get a map with all current planning specific Mataro, excluding what is not considered relevant field or subject.

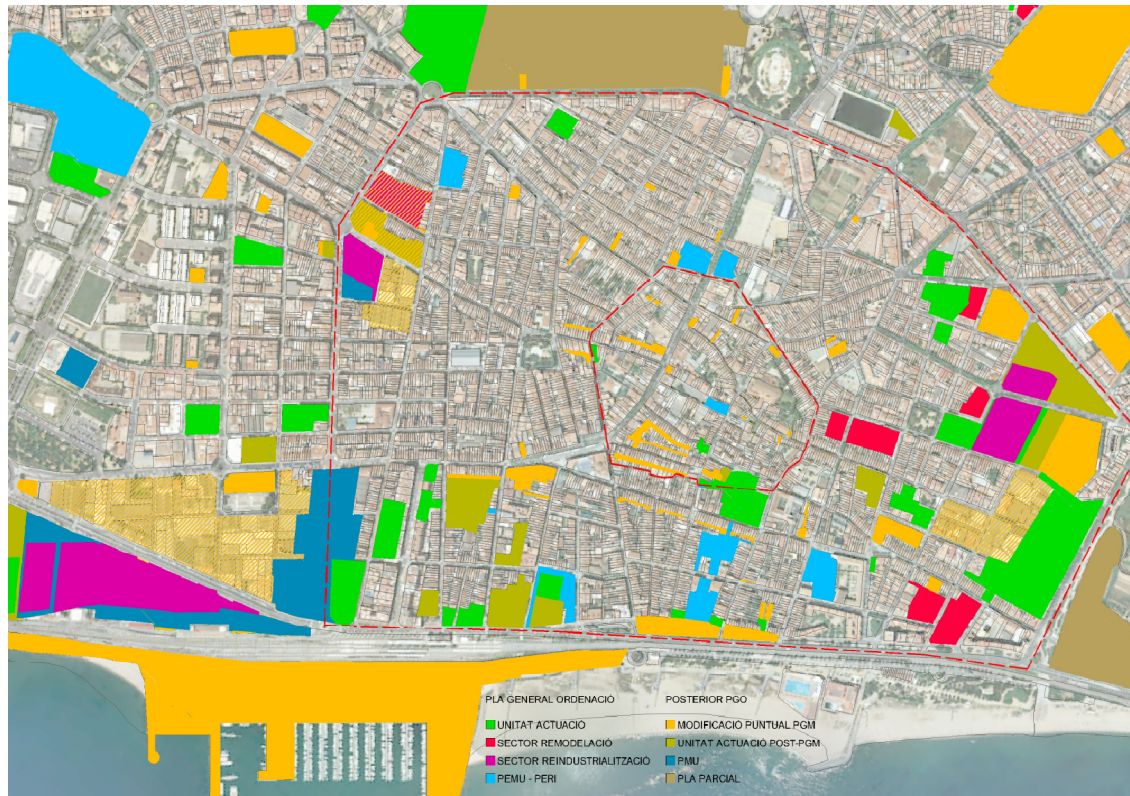


Image 7. Urban Planning localization

It is observed that the position of polygons and sectors is clearly peripheral in relation to the crown of the first extension of 1878 and very similar to the location of empty lots.

Finally, the comparison is displayed graphically maintaining differentiation (colors) of the types of gaps Urban affected

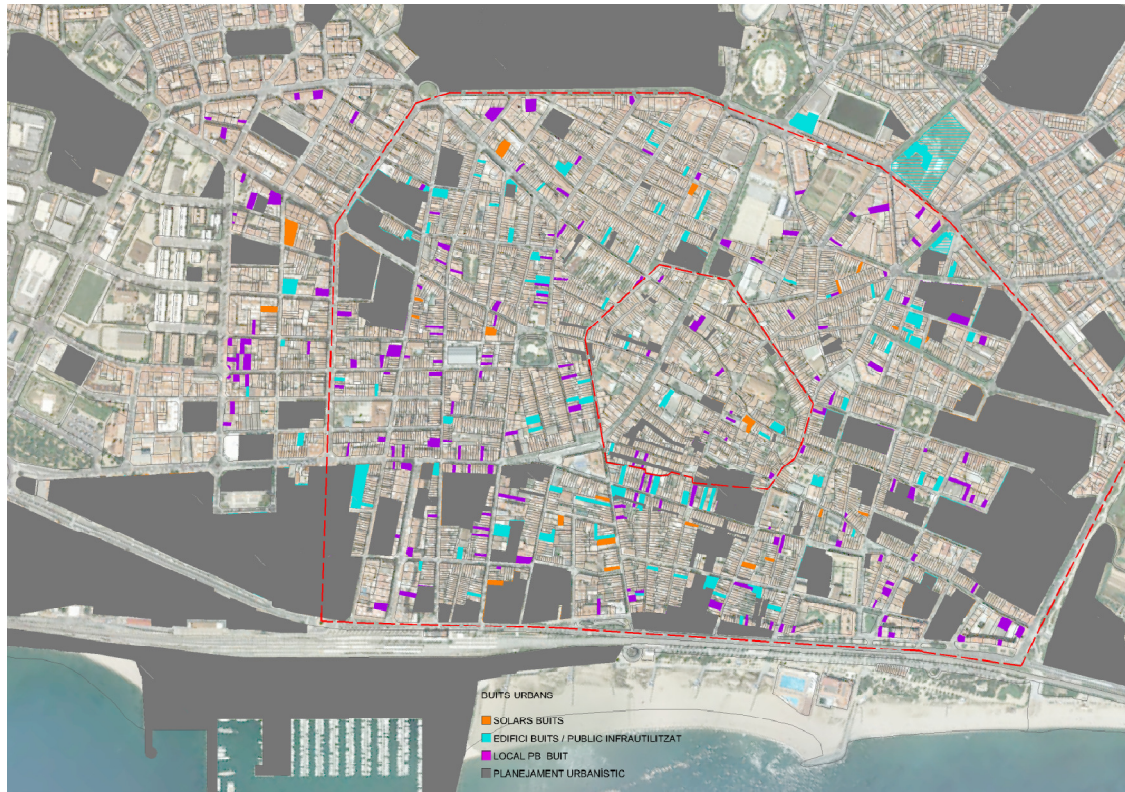


Image 8. Geographical Superposition of Urban Gaps & Urban Planning

Highlights the disappearance of the color orange (empty lots) and cyan (empty buildings) of the larger size.

For making the holes small grain distribution for the city planning is not affected by the regular force. This suggests that the reason for the latter must be different to that of adults.

Finally, we are able to quantify in terms of location, because the relationship / effect / cause between the gaps in Mataro Urban and Municipal Urban Planning.

Before showing the data necessary to clarify that in the calculation of the number of estates affected are counted only those who are completely inside the cross.

	TOTAL		Affected By Planning			
	Area	# ID	Area	# ID	% total area	% # ID inicial
LOTS	107.910,55	42	93.691,18	19	86,82%	45,24%
BUILDINGS	68.142,43	126	21.135,11	37	31,02%	29,37%
COMERCIALS	53.939,58	202	11.886,76	44	22,04%	21,78%
TOTAL	229.992,56	370	126.713,05	100	55,09%	27,03%

Table 2. Interaction Urban Gaps Vs Urban Planning

SOCIAL MOTION

In these last section of work, corresponding to the scale and Solar, identified some of the social initiatives that have a direct relationship with the reality of the Urban Empty.

First, these are located on the city map, showing that some of them (2, 3 and 8) relate to more than a hollow center.



Image 9. Social Initiatives geographical situation

1. CAN FÀBREGAS de Caralt

It is the old location of the industrial group of this name. The interest by department stores to set up in the city, led to the miscataloged and dismantling and subsequent transfer of the buildings.

The factory was closed (empty buildings) since 1980, when it stopped its activities papermaking.

In response to this fact is the platform "Save Can Fàbregas" defence of architectural heritage and traditional commercial model of local commerce.

There have also been various initiatives through social networks

2. SCHOOL JOAN COROMINES

Joan Corominas The school is currently running at half its capacity since it lost one of the two lines which provided for the year 2013/2014 in 17 families leaving first choice and the other eight from deficit school in the centre of Mataro.

Moreover, in this case intervenes another empty lots (see map) where you have to build the future school integrating all educational levels offered by the centre.

This has caused the reaction of diverse nature of the community education centre, the parents directly affected by the closure and other organizations and individuals that

have materialized in the group We Pineapple !, the creation of the Association rush t (Association of Families Affected by Nyap Territorial Administration), promoting individual campaigns to collect signatures, school closings ...

3. SCHOOL ANGELETA FERRER

The school occupied a building and terraced patios island in the Plaza de Cuba. The premature closure of the school, for technical reasons (detection of aluminous cement) school has exacerbated the lack of public squares in the city centre and the need to accelerate the construction of the new centre.

Reacting to this, the education community has been organized on the platform "Save the School Angeleta Ferrer" which also promoted initiatives denunciation and support through social networks.

4. CAN XALANT

The centre of creation and contemporary thought Mataro, recognized as one of eight centres Public Network of Visual Arts Centres and Spaces of Catalonia, closed doors on 2013.

Its relative low visibility towards the city (there's also helped that location) generated positioning of different orientation, or against closing.

However, it is clear that reactions that have occurred here and it leaves a sample.

5. ILURO CINEMA

Iluro Cinema, with capacity for almost 1000 people, the room was more emblematic of Mataro and was the last one ended (2001) this type of equipment without leaving the village.

This caused several campaigns to collect signatures for workers and some citizens on social networks.

Moreover, in a collective • Side Development Association Mataroní returned to his room to screen films on the streets of New Street.

6. CAN MARFÀ

Can Marfa is an industrial group listed its one of the first steam of Mataro.

Its rating is of Equipment and initially had to host a CAP. according to the latest forecasts, will host the Textile Museum in the city.

Now, following the demand of the Association of Residents of Havana and commuter been minimally equipped and enabled space adjacent buildings to give a playful use daytime. The ships, however, are still waiting for their chance virtually empty.

7. IVECO-PEGASO

This space over 100.000m², subject to two MPG (MPG MPG-42 and-81) should be a new residential area next to the beach.

Now, 10 years after the closure of the old factory, renamed the area Arquera and initiative of private events are hosted occasional / temporary as the festival Crossing Cultures, themed parties, market or alternative Firantic Maresme peripheral parking served the city for trade fairs and cultural and social events.

8. CAFÉ DE MAR

This case is particularly significant with regard to changes (dynamism) it has undergone and the cooperative movement as a symbol of the city.

The former Café Fisherman Mataro, has just reopened at the initiative of the Union of Cooperators Mataro as a culinary space and library.

However, this building was squatted up to 2000 and after his rehabilitation hosted the Regional Services Department On education.

The Union of Cooperators Mataro is also, among others, behind the recovery yard Café Nou, of which the main building is still empty. (See location 9Bis).

9. RESIDENTIAL BUILDING

On a smaller scale, buildings (and floors) gaps are also cause for protest and reaction from the public.

In this case, a building newly built seven houses that did not get to sell the bankrupt promoter and currently is owned by SAREB (bad bank) has been squatted peacefully (and silently) for several families.

In response, 15 people from several families living there have to live under the threat of imminent eviction.

In this thematic line, highlights the movement of PAH Mataro, like many other towns, has created a strong core of vindication campaigns of different types (street protests, in plenary, Internet ...)

One aspect of these movements is the multiculturalism of its members because many of the people affected are immigrants.

10. DETACHED HOUSE

This empty building in the center of the city has been squatted by col • Following group to make a Casal Popular (before been to another building where they founded Casal Popular The Vines)

In this case, in the driveway of Multifamily building highlights the controversy aroused such actions in the rest of the neighbours and that is evident

Comments "anonymous" you can read the news websites.

CONCLUSIONS

In the study area have detected a total of 370 different types of urban gaps with a total of almost 230.000m² affected (23Ha), representing an impairment of 10% of the total area (240Ha).

Regarding types, Sites, Buildings and Premises, Premises predominate, with more than 200 units and 53.939,58m², though, are the plots, only 42, which entail a greater surface with a total 107.910,55m². Finally, the type buildings is somewhere in between, 126 and 68.142,43m².

Subsequently, the growth accelerated by the arrival of immigrants and the creation of suburbs (Palau, Rocafonda, mills, Cherry, rim and Cerdanyola), some with high rates of self, these peripheral areas became central , a transformation that has proven , difficult to assimilate.

More recently, the expansion of industrial and tertiary areas of the industrial west (Pla d'en Boet, Rengle, Las Huertas ...) and east (Mata-Rocafona and Vallveric) has meaning (price, accessibility , transport, services ...) total loss of competitiveness in these areas.

From the perspective of the adaptive cycle, the empty urban denote a stagnation phase in the evolution of system-wide Town, a situation that is not yet known whether it will be temporary or stationary. Its potential is maximum Resilience is maximum, but this destruction is creative or not will depend on the dynamics of the influence of internal and external systems interact.

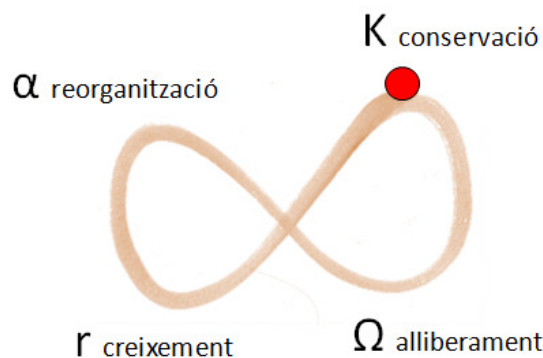


Image 10. Adaptive Cycle "City scale"

Possible future extensions of these issues were, from a planning perspective, the classification of the Urban Empty based on other parameters (E.g. Clau urban-term relationship with new developments ...). December systemic vision, there would be possible to analyze this reality as approach to the complexity (non-linearity, self-organization, forks, feedback ...).

In this last aspect worth mentioning the works of Batty and Salat on the growth of the city and fractals, which could be a reference for the study of Urban Gaps.

Regarding Urban Planning, has proven that there is an unequal relationship between the location of gaps detected and urban planning regulations.

In this regard, highlights the 86.82% of the area affected by the category Solar planning any specific figure, while lower than in the case of buildings (31,02%) and even more in the local (22.04%).

Opt, too, that, however, is affected only 45% of the items in the category Floors, showing that those affected by planning (55%) are the most concentrated area to be larger.

Moreover, it was found that more than 82% of the affected area and 50% in number of specific modifications to the General Plan (discounting Partial Plans) relate to already identified sectors of the city and for those who like special consequently, the PGO proposed specific figures planning, derivative and / or management.

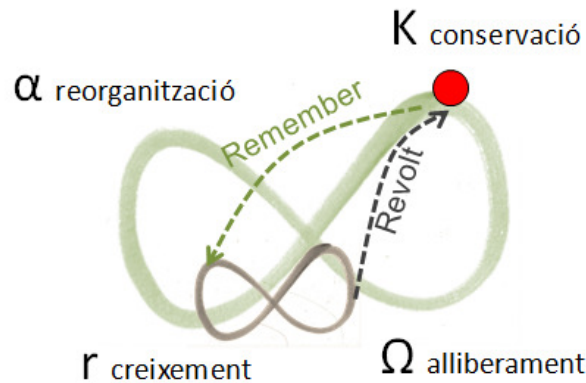


Image 11. Adaptive Cycle “Neighbourhood scale”

This situation is characterized by stagnation after many years of very strong momentum that fuelled the economic and real estate bubble, has prevented regeneration of the way to town.

The system attempts, but without success, to put in place mechanisms that allow small-scale start and overcome this situation.

The danger, however, is that this situation can assimilate with that, in theory Adaptive Cycles, Rigidity is known as a trap in which, despite the high potential, there is also a kind of Resilience engineering, resistance to change that prevented the evolution of the system.

For this reason, the amount and diversity in the types of answers citizens facing the problem of gaps is considered urban scale "solar" system is undergoing reorganization between Ω and α .

In this transition phase change system is able to retro-feed accumulated capital (Remember) systems level who are in a position to start creative destruction (K in Ω), Which will amplify and accelerate the growth process.

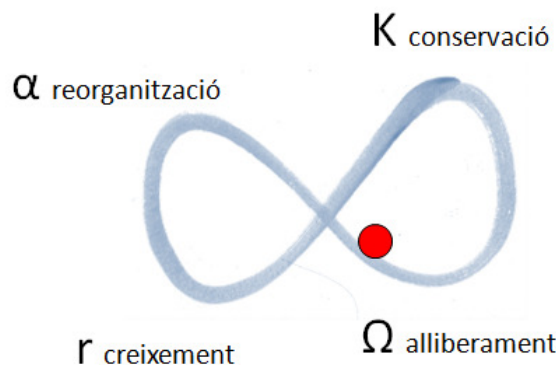


Image 12. Adaptive Cycle “plot scale”

As in previous cases, the evolution of this cycle is determined both by the internal dynamics of the environment in space and time.

In short, and as suspected, there is a relationship between these different areas: city (empty), political (regulatory / planning / Agenda 21) and social movements are closely related and are both cause and effect of each other and part of their own urban dynamics.

Finally, we propose two schemes Panarchy representative of the interactions between the various scales from the mechanisms of the Revolt and Remember and based on case studies

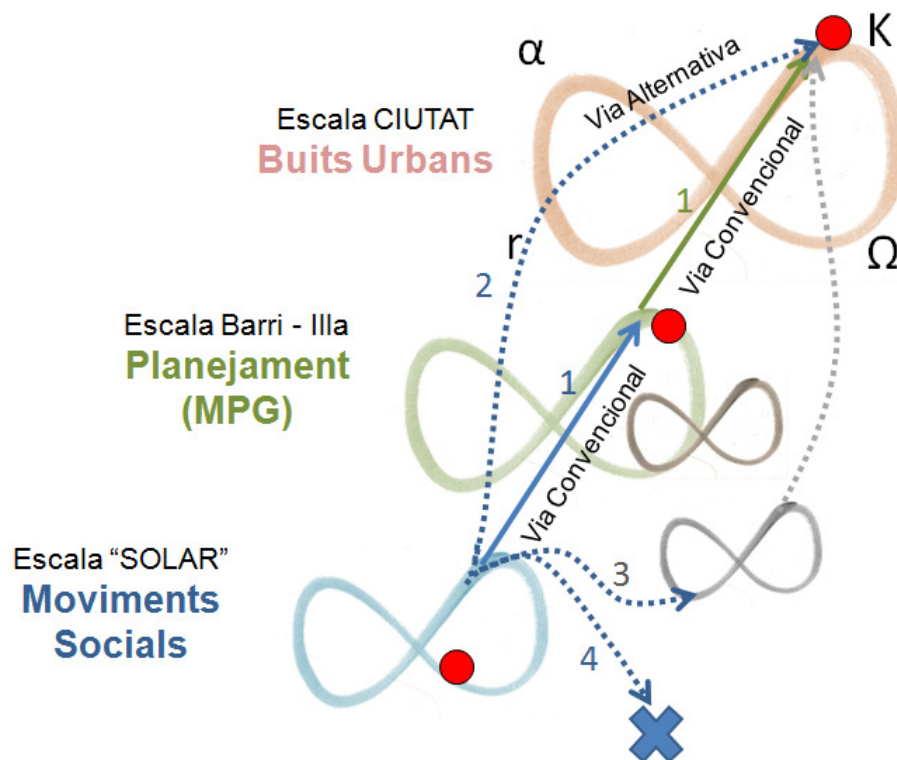


Image 13. Panarchy scheme for "Revolt" dynamics

Thus, regarding Revolt, there were different four (4) different mechanisms. First, the Conventional way in which the system operates below (or try to act) directly on the direct superior (K phase) making it come under creative destruction. Here we identify the case of Can Fàbregas, Joan Corominas School, the School Angeleta Ferrer and Café de Mar where citizens' initiatives try to influence the planning and own it, the solution was aa reality of urban gaps.

Secondly, there is the alternative route characterized by jumping from the lower scale than bypassing intermediate. Examples of this are the cases of squatting and the demand for square Can Marfa initiatives acting on the vacuum left over by squatters or local pressure, but without passing the legislation.

Thirdly, what has been called Third Way, where highlights initiatives that have led to proposals for alternative / parallel • Parallel to the reality of urban gaps, regardless of whether they have influence or not the solution this reality. There are cases of School

Joan Corominas and Iveco Pegaso. First with the creation of an alternative nursery (Pelitrumpeli) and the second for the implementation of temporary activities, possible only by the reality of empty space.

Lastly, Siding, characterized by initiatives and movements that have not had a sense of continuity in development or result in demand, with actions that have ceased to generate dynamic. It identified the case of Can Xalant and Iluro Cinemas.

Moreover, the proposed scheme of interaction Remember, the higher the systems (large lenses) acting on the lower (small and fast). In this case, differently from the proposed Revolt, which are identified three (3) samples corresponding to two (2) types of interaction.

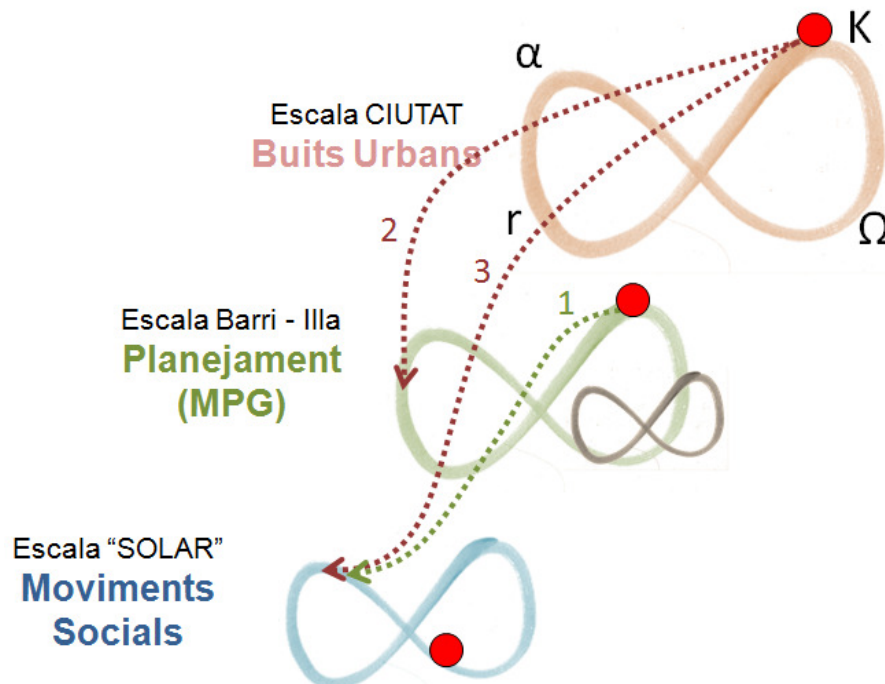


Image 14. Panarchy scheme for "Remember" dynamics

Thus, in the first instance, the stagnation of Planning, Island-wide, is a source (capital) knowledge and experience of key social movements scale Solar can use this experience and these data to their own advantage in proposing alternative actions.

Likewise, in the second case, the reality of the gaps scale urban city should use (should) not planning to repeat the same mistakes of spaces and is a source of opportunity for new planning proposals future.

Finally, in Example 3, and after seeing the cases shown to work, it is therefore clear that the Urban Gaps are both capital and source of Social Movements and fuel and to its reorganization.

In short, the Urban Gaps are components of an urban reality, interaction in understanding how different systems will require a vision different spatial and temporal scales.

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